

REMARKS

ON

VACCINATION

BY

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VACCINATION.

Address by His Worship the Mayor, Wm. H. Hingston, M.D., Chairman of the Board of Health, to the Public Vaccinators, and other Physicians and Citizens, on Friday the 20th October, 1876:

Gentlemen: The prevalence of small-pox in this city, disturbing its tables of mortality; affecting its reputation; and injuring its trade; has rendered it necessary that more than usual efforts should be made to eliminate it from our midst. Large and airy hospitals are established, where every care and attention are secured to those who are admitted. It is hoped personal and selfish, (if not patriotic motives alone) will induce those afflicted with the disease to isolate themselves, and seek comfort and alleviation within their portals; and not continue to be sources of danger to others. But such isolation as can be secured is unequal to arrest the progress of the malady without the prophylactic means which science has secured to us. Your services, gentlemen, have been invited for that purpose, and to you is entrusted the important task of vaccinating throughout the city generally.

While having every confidence in your thorough fitness for the important work; that you may pursue a common course of action I have prepared a few rules for your guidance. They have received the sanction of the Board of Health to which I submitted them at our meeting two days ago; and will, I venture to hope, be found sufficiently clear and distinct for the purpose for which they are intended.

BOARD OF HEALTH.

INSTRUCTIONS TO VACCINATORS.

1. Do not act by deputy, but vaccinate, either by yourself, or by some fully qualified medical practitioner as your substitute.
2. Vaccinate only subjects who are in good health, with *prima via* in good order ; and with no eruption behind the ears, or elsewhere on the skin ; nor any febrile state.
3. Do not vaccinate a subject to whom, from the state of health, vaccination may prove injurious.
4. The Board is responsible for the purity of the lymph furnished in the first instance ; but as you are strictly responsible for the quality of whatever lymph you gather for further vaccination, be careful to take it only from subjects who are in good health, and free from eruptions on the skin.

N.B.—Good lymph is liquid, clear, limpid, translucent, sometimes slightly yellow, and moderately viscid, and should flow slowly from the punctured vesicle as a syrup, and collect into a globule.

5. Take lymph only from well characterised uninjured vesicles, and not from cases of re vaccination.
6. Take it when the vesicles are plump, (this is usually on the 8th day) and within twenty-four hours after the areola has begun to form.
7. Avoid draining any vesicle which is punctured.
8. If any undue local irritation arises in more than one case vaccinated from the same lymph, desist from employing it any further.
9. If the supply of lymph ceases or becomes unsuitable, procure a new supply from the cases already vaccinated, or from the Board of Health.
10. Vaccinate from arm to arm when practicable.
11. If the crust be used, it should not be taken from the arm before the 21st day : or better still, wait till it is quite loose.

N.B.—The crust should be of a dark amber color, and semi-transparent. It should not be too thin nor brittle, but should cut easily, and without fracture, and be the product of an undrained or uninjured vesicle.

12. The Lanceet used for vaccinating must not be employed for any other surgical operation.
13. Note particularly, in each case, the source from which vaccination is done.
14. The system should be thoroughly protected by the production of at least four vaccine vesicles.
15. Carefully fill up the blank Certificate furnished, of those vaccinated ; or furnish a card to be forwarded to the Health Office for those willing to be vaccinated, but who prefer their family Physician ; or note name and address for the information of the Board of those unwilling to be vaccinated by any one.

WM. H. HINGSTON, M.D.,

Chairman.

I. C. RADFORD,

Secretary.

It has been suggested to me by some of your body, that, in addition to the above, something might be said to meet the objections urged by those active, but mistaken writers, against the practice of vaccination. Had similar articles been written against the practice of setting fractures ; of reducing dislocations ; or of removing dead parts from living bodies, I should have thought it useless to reply : for if surgeons contend that a dislocated bone should be reduced, the profession—I speak of its more experienced members—is almost equally unanimous in favor of the practice which some so persistently, and so unfortunately, denounce. It is something to array oneself against the general belief. To follow quietly in the footsteps of those who, in all things else, medical, are our guides, brings with it, to the mind, less *éclat*, than to take up arms in what may be considered a safe warfare—safe, perhaps, to the combatant, but fraught with terrible mischief to those most interested. To prove to the unprejudiced that vaccination exerts a protective influence over the economy would be an easy task, for the writings of thousands, from the time of Jenner to our own day, are before us for the purpose ; but to attempt to convince those who persistently close their eyes to the overwhelming evidence of almost every country and government in the world, including our own, would be as fruitless as was the effort to convince the disbeliever in matter of the reality of the missile which almost knocked off his too unyielding head. In deference, however, to wishes expressed, and suggestions offered at a meeting on Wednesday last, I venture some observations on this disease, now unhappily too prevalent, and on the means which science has furnished for its prevention.

Small-pox has its periods of dormancy, and its

periods of activity, at one moment overspreading a district, and at another disappearing. It is fatal in direct ratio to its epidemic character. Cases occurring sporadically (here and there in spots), are not so fatal. It is the most contagious of all diseases ; and this is a point on which I wish to insist ; for some industriously endeavor to circulate the belief that small-pox drops upon individuals as rain drops from heaven—touching this one and sparing that ! It is communicable in every way : by inoculation, by breathing a contaminated atmosphere, by the contact or vicinity of fomites. It is infectious in the early febrile stage ; infectious before and during the eruption ; and infectious “so long as any of the dry scrabs resulting from the original eruption remain adherent to the body ” It may be caught, therefore, from the living body ; it may be caught from the dead body ; or it may be caught from clothing and furniture near the living or the dead body. So much has this foul disease been dreaded, that different nations in times past endeavored to mitigate the malady by communicating it artificially. The Brahmins in India engrafted the virus ; so also did the Turks ; and the Chinese were in the habit of putting some of the crusts into the nostrils. The practice of inoculating with small-pox virus became more or less general in Europe ; and its efficacy in mitigating the severity and the danger of the disease was considered to be very great. While it is estimated that one third of those who take the natural small-pox die, not more than three or four in a thousand are destroyed by the engrafted disease. (Curschman states it to have been about two per cent.) But the time for small-pox inoculation is past, the law having wisely forbidden it.

Eighty years ago a chance observation was matured into a rational and scientific form by a mind deeply imbued with the best principles of sound philosophy ; and a disease, mild in form, and safe in character, was substituted for the inoculation of the Turks and Chinese. In 1798, Jenner published his first important paper. In 1799 the first public institution for vaccination was established in London ; in the following year it was introduced into France and Germany ; and the practice of vaccination has now become general over the whole educated world. Here and there, as might be expected, it has met with opposition ; but every objection that has been urged by the anti-vaccinator has been answered again and again by the leading minds of the profession. So much is this the case that I feel I owe something like an apology to my medical brethren for writing affirmatively of a practice which most of them endorse. I spoke a moment ago of Jenner as a discoverer ; but Jenner did not discover vaccine any more than Watt discovered steam. He noticed the prevalent belief among the peasantry in the immunity from small pox enjoyed by farm servants and milk maids ; and little by little he drew the conclusion which has been so pregnant with benefit to mankind. The belief in the existence of a vaccine virus was not confined to England. Cow-pox and its relations to small-pox had been noticed long before on the continent of Europe ; * and in France and Germany numerous experiments had been made, prior to the time of Jenner, to show that persons affected by natural

* Doctor Michea published an article some years ago proving that Vaccination was known to, and practised by the Hindoo physicians ; and gave an extract from the Satega Grantham (a sacred book attributed to Dhanwantari) in support of his assertion.

vaccine virus were not susceptible to the small-pox influence. Jenner's merit consisted chiefly in *producing* the virus at will, and in diffusing it, at pleasure, for our advantage. And how slowly and how cautiously he advanced his every statement, may be gathered from the fact that twenty-two years elapsed between his first experiment and the promulgation of his theory. He was assailed then, as his memory is to-day; but with more excuse then than now, for no one having the leisure and the disposition to read, and having access to the records of medical observers, has now the shadow of an excuse for rejecting the theory then advanced, the critical acuteness of which, says Curschmann, may serve as a model. But we do things differently now a-days, and a harangue in a market place or public square, by gentlemen who may, 'tis true, be authorities in *law*, but cannot be accepted as such in medicine, is deemed sufficient to introduce the uninitiated to a knowledge of one of the most difficult and abstruse subjects in the whole range of medical science. I shall not allude to the members of my own profession who have chosen so far to forget what is due to their own dignity, and the dignity of their calling, as to select such an arena for the dissemination of their fatal errors.

As the times are as pregnant with mischief, as the air is with the disease, I proceed to ask and to answer questions asked and answered a thousand times:

1st. Does vaccination confer a certain degree of protection against small-pox?

2nd. Are the effects of vaccination permanent?

3rd. Is there risk of lighting up local inflammatory action?

4th. Is there risk, when vaccinating, of inoculating the system with scrofula, or other hereditary disease?

5th. Is there risk of contaminating the system with syphilis, or other acquired disease?

The answers to these questions will, I think, cover the ground gone over by the anti-vaccinists.

1st. A simple assertion that vaccination does confer a certain degree of protection against an attack of small-pox would at once be met by a counter assertion that it does not. The question, therefore, will be answered inferentially, and from authors the most trustworthy, though a desire to economize space prevents me from citing them at length.

And first for *England*. In the first thirty years of the last century, when inoculation of small-pox was unknown, the mortality in London from that disease was 7.4, and at the close it was 9.5 per cent, inoculation having been introduced in the interval. A Committee of the Epidemiological Society have compiled tables to show the ratio of mortality from small-pox in London before and since vaccination was introduced, and the following are the results: For the fifty years, from 1759 to 1800, the average number of deaths from small-pox, out of every 1,000 deaths from all causes, was 96 or nearly ten per cent; while during the first half of the present century (the half-century *succeeding* the introduction of vaccination) the mortality was 39. In the whole of England, according to official returns, the estimated death-rate from small-pox alone at the end of the last century was 3,000 per million, while from the same returns the present death-rate from the same cause is only 200 per million! An analysis of the latter is most interesting. Vaccination has, in Great Britain as elsewhere, had its

opponents, but the practice has become more and more general, (and the opposition to it less and less,) till now it is quite general. What is the result? During the first ten years of the present century, the mortality from small-pox in every thousand deaths from all causes was 64; in the second decade, 42; in the third, 32; in the fourth, 23; and in the fifth decade it was 16. Let the anti-vaccinators explain this as best they may. Not only has the average of deaths from small pox diminished in the above ratio, but epidemics of the disease have become less frequent. Before vaccination it was as 48; during vaccination it was as 14. The inference from all this is thus drawn by Sir Thomas Watson (the ablest medical writer in London): "Where vaccination is, the contagion of small-pox need never come."

Dr. Robert Thomas, author of the "Practice of Physic," which serves as a text book for students and physicians, after a long and careful analysis of the vaccine question, and giving to every objection the most patient consideration, thus sums up: "the introduction of vaccination, notwithstanding all the abatements which must be made in the estimate of its powers, is still one of the greatest boons that science ever conferred upon mankind. Compare the ravages committed by small pox, before and after this important epoch; and we may in the first place, appeal to general experience in the words of the Report of the National Vaccine Establishment, where the rarity of an example of disfigurement by small pox now to be found in theatres, in churches, or any large assembly of the people, is adduced in proof of the continued protective property of the lymph employed." After a long and laborious analysis of the bills of mortality, and of the observations of Christian of

Liverpool, Percivall of Manchester, Monro, Ceely, Gregory, Thomson, Curtis and others, he says : " if these conclusions, derived as they are from somewhat extensive data, be at all near the truth, they will go far to prove Mr. Curtis's assertion, where he says of vaccination, that its value is much greater than that of any known remedy for any known disease at all comparable to small pox in mischief to the human race.

How is it in *Wales*? Dr. Hughes, of Mold, states : " no child born in the Mold district, and alive at the date of the registration of its birth, has died of small-pox during fourteen years, yet small-pox has prevailed on various occasions all around it."

How is it in *Ireland*, where vaccination has been compulsory for the last fifteen years? The immunity afforded by vaccination there has been such as to induce a wide-spread belief in its efficacy among the people. Vaccination is practiced generally all over that country, and the children of the soil carrying with them an entire confidence in the practice, are always the most willing to be vaccinated. The results are seen in the following figures, from which it appears, says an official document, that the Irish physicians have banished small-pox from their island, as Saint Patrick is said to have banished the snakes. In the periods 1830-40, 1840-50 and 1850-60, before vaccination was general, the respective annual average mortalities had been 5,800, 3,827, and 1,272. In the years 1864, 5, 6, 7, 8, they were 854, 347, 187, 20 and 19, respectively. In the first half of 1869, the whole number was three ! The remarkable immunity from small-pox conferred by vaccination, induced a laxity in the practice, and a few cases occurred subsequently to 1869, but they were supposed to have been imported. In Montreal there are comparatively few

children of Irish parentage unvaccinated, and our tables of mortality—to which I beg to refer—show how very few of that nationality die of small-pox.

What is thought in *Scotland* of the protective influence of vaccination? I quote again only our medical teachers—those from whom we are content to receive our medical knowledge. One of the most distinguished medical philosophers that *Scotland*—and *Scotland* is prolific in medical philosophers—has produced; and one who graced, for a great number of years, the chair of medecine in the University of Edinburgh, writes thus: “The first question is whether or not we have, at this time, in the matter of cow-pox, a power at our command capable, if duly employed, of depriving the poison of small-pox of all fatal influence over an immense majority of mankind. And on this subject there has been quite sufficient information collected, since the date of the papers which were held decisive of the question fifty years ago, to show that the same inference is still inevitable, and that he who disputes it is equally unreasonable as he who opposes, in like manner, any proposition in *Euclid*. Of course, when I say there has been ample evidence to decide this question statistically, I mean to refer to cases where we have not only the negative evidence of large numbers of persons duly vaccinated, having been subsequently, most of them repeatedly, or for a long time together, exposed to the contagion of small-pox—*i. e.*, placed in the same circumstances in which unvaccinated people have been generally affected, and many of them died of small-pox; these vaccinated persons have nevertheless escaped, most of them without any indication of disease. To show that this is the light in which I have always regarded such collections of facts, I quote

one sentence from my own lectures, written as long ago as 1820-1821, and repeated almost every winter since then :—“ You will remember that the question is, not how many vaccinated persons never take small-pox, but how many vaccinated persons are fully exposed to the contagion of small-pox and escape without any disease ; and our assertion is that, so far as is yet known, absolute protection of the human constitution is the rule, and the occurrence of any disease is the exception.” Those who, like me, have had the advantage of listening to that most profoundly logical and conscientious medical teacher, well know the care and thought he gave to his every utterance. Dr. Alison has passed away, and what says Dr. I. Hughes Bennett, his successor in the professorial chair ? “ We have no remedy (for small-pox) but vaccination ! ”

Let us now proceed to the Continent, and what do we find ? And first to *France*—ever foremost in all researches having science for their foundation. M. Bonsquet, in his *Traité de la Vaccine*, gives most accurate and interesting details of an Epidemic of Small-Pox which visited Marseilles in 1825. The population of Marseilles amounting to 40,000, might be divided into three classes, of which the respective numbers stood thus : 30,000 vaccinated ; 8,000 neither vaccinated nor variolated ; and 2,000 variolated—that is who had the small-pox either naturally or by inoculation. Of the 30,000 vaccinated, about 2,000 were seized with the prevalent small-pox epidemic, of which number 20 died or 1 for every 100 affected. Of the 2,000 variolated, 20 were attacked and 4 died ; or 1 in every five cases. Of the 8,000 non-vaccinated, 4,000 were affected, and of this number 1,000 died or 1 out of every 4 cases. From this it follows

that one-half of the non-vaccinated, 1-15th of the vaccinated and only 1-100th of the variolated took the disease. But such was the difference in the comparative severity of the attack in the vaccinated and variolated, that while the variolated part of the population were cut off in the proportion of 1 out of every 500, the vaccinated part of the population only lost 1 out of every 1500; or in other words, of an equal number of variolated and vaccinated cases, 3 variolated died from the second attack, for every one who died of the disease after vaccination!

Gaultier de Glaubry states—and his statement is confirmed by others—that while, in 1841, small-pox in France carried off more than a seventh of those attacked by it who had not been vaccinated, the mortality was only one in a hundred among those who had contracted the disease after having been vaccinated.

La vaccination peut être pratiquée avec succès, says Bouvier, en toute saison; en tout temps d'épidémie on doit vacciner les enfants le plus tôt possible après leur naissance; les re-vaccinations sont nécessaires pour mettre à l'abri de la petite vérole; elles sont sans danger et particulièrement utiles pendant la durée d'une épidémie quelle que soit l'époque de la précédente inoculation du vaccin.

There are, in every country, men who stand out in bold relief even among their compeers; and high among the ablest medical writers of France, or of the world, is the name of Grisolle—*cette ame à la vieille marque*. There are some so bold,—and I am one of them—as to place his “*Pathologie Interne*,” among the greatest productions of genius—a work in which no unstable theories however brilliant—no baseless speculations, however fascinating—find place—a work

which reached its 9th edition in about twice as many years, and which, during that period was, and still is, the standard authority upon a most important department of medicine. M. Grisolle says: "Les recherches de Jenner lui ont assigné une place éminente parmi les plus grands bienfaiteurs de l'humanité. La vaccine a donné lieu en France à des travaux importants. On peut vacciner dans toutes les saisons et à tout âge. On attend généralement que les enfants soient âgés de deux ou trois mois pour les inoculer; mais cette pratique, *que rien ne justifie*, n'a aucun avantage; ce retard a été cause que beaucoup ont eu une variole presque toujours mortelle, et qu'on aurait pu leur épargner. J'ai inoculé mes deux filles dès la fin de leur première semaine. C'est ainsi que nous devons agir pour nos enfants, plus exposés sans nul doute que les autres à la contagion médiate. On devrait même inoculer aussitôt après la naissance, si l'on était en temps d'épidémie varioleuse, ou si les individus vivaient dans un milieu infecté; c'est ce que j'ai fait maintes fois à l'hôpital sans aucune espèce d'inconvénient. Il n'y a aucune préparation à faire subir aux sujets qu'on doit vacciner. L'opération de la vaccine est fort simple. Il est certain, en effet, que *la plupart des vaccinés sont définitivement à l'abri d'une atteinte de variole. Il est certain du moins que la vaccine rend la variole bénigne que la mort en est rarement le résultat.*" I have quoted at length from Grisolle; as he may be said to bear the relationship to medicine, in France, that Blackstone does to law in England. In *Copenhagen*, the fatality from small-pox is but an eleventh part of what it was before the introduction of vaccination; "in *Sweden* it is a little over one-thirteenth; in *Berlin*, in Prussia, and in large parts

of *Austria*, but a twentieth ; in *Westphalia* but a twenty-fifth ! ! " In *Bohemia*, *Moravia*, and *Silesia* it has been reduced from 4,000 in every million of deaths to 200 per million ! Not only is it satisfactorily established that vaccination is an effectual safeguard against small-pox, it is, according to some, more effectual in preventing small-pox than is small-pox itself. This was thoroughly tested in Hanover, where it was found that out of a hundred soldiers re-vaccinated, sixty-two per cent failed altogether in producing a vaccine vesicle ; and twenty-seven per cent were only partly successful. Soldiers who had already had small-pox were operated upon in the same way, and with precisely the same result.

Taking Europe as a whole, the conclusion arrived at by Berard and DeLavit, of Montpelier; Hodenpyl, of Rotterdam; and Thompson, of Edinburgh, after a close observation, and especially of the epidemic of small-pox in 1816, 17 and 18, in (1) the vaccinated ; in (2) the variolated ; and in (3) those who had neither been vaccinated nor had small-pox was, according to Dr. Stark, thus : Of those who had neither had cow-pox nor small-pox, one out of every four who were seized with the disease, died ; of those who had small pox naturally, or by inoculation, one of every twenty-five to one in seventy-five died ; while of those who had been vaccinated, and were afterwards seized with small-pox, not more than one in three hundred and thirty cases died ; thus showing the great superiority of vaccination, even to the small-pox itself, in protecting the system from the fatal effects of a second attack.

Such information as I could glean from different sources leads me to the conclusion that an attack of small-pox and vaccination confer the same degree of

immunity from an attack of small-pox ; but that subsequent *fatal* small-pox follows more frequently after small-pox than after vaccination.

How is the practice of vaccination regarded in the *United States*? Gentlemen : it would be an endless matter to quote the opinions of the many medical observers in the adjoining Union, but I shall introduce the substance of everyone's remarks as furnished to the State. Several of the States of the adjoining Republic have their State Board of Health ; and each Board may be considered to reflect the opinion of the medical minds in the State. The State Board of Health for 1871 says :—" No amount of disinfectants can cope with this dire disease. The only way to thoroughly drive it from the United States is by a national law, as in England, requiring every parent to duly register his child after having been duly vaccinated." The experience of Massachusetts is summed up in the report from which I quote : that small-pox has appeared here and there, but where it has appeared sporadically it has always been in places where vaccination had been neglected. The town of Holyoke, in the Connecticut valley, was an illustration. One-fifth of all the deaths from small-pox occurring in the whole State took place there. The people in Holyoke had not been vaccinated as elsewhere. Dr. Geo. Darby, of Boston, Secretary of the State Board of Health, summarises for his Board as follows (and his summary receives the sanction of the Board) ; vaccination " invests the human body with an armour which may hardly be penetrated" by this subtle poison." A year later (an epidemic of small-pox having passed over Connecticut) he writes : The present epidemic is of such intensity, that it is quite common for persons who have had small-pox in former years to now have it

again. Such occurrences have been previously rare. Vaccination, whether from the cow or from the human body, "takes" readily ; and re-vaccinations prove abundantly the extraordinary susceptibility to the vaccine disease now prevailing, and *never before existing*. In view of these facts, with which physicians and intelligent persons, of whatever calling, are now familiar, let us thank God for Jenner's great discovery, without which our homes would be desolated, and our peace and happiness destroyed. The imagination can hardly picture the horror which would to day pervade Massachusetts, were the present epidemic unchecked by vaccination." A year later (1874) the epidemic being over, the same authority, and the same Board, report *inter alia* : One year ago * * we were in the midst of an epidemic of small-pox of extraordinary intensity * * * the protective power of vaccine has been proved beyond all question, and the absolute need of *careful vaccination* is equally evident. From September 6th to the close of the year, not a single death from small-pox has been reported to us from the cities or state." I received the last " State Board of Health " report, a few days ago, an interesting document of nearly four hundred pages, and so completely had vaccine done its work that the report contains no allusion to the dreaded disease. Thankful for the immunity afforded, the reporter from whom I quote writes : " Vaccination needs no defence from us. Nothing, however beneficent, can escape the criticism of the times in which we live. But this criticism of vaccination, often passionate and violent, relates chiefly to points which, however interesting they may be, leave the main question unaffected. Let any one read the history of the ravages of small-pox before Jenner's discovery, and compare

it with the mortality of Massachusetts from this cause in the present generation, and ask himself the reason of this change. There can be but one answer. We may speculate about the possibility of the potency of vaccine being exhausted in the human family ; we may be surprised to find that people with good vaccine scars sometimes have small-pox ; we may dispute as much as we please about the average period when re-vaccination may be considered a prudent safeguard ; we may even conjecture (what no man has proved) that other diseases than that of the cow may be communicated by humanized vaccine ; we may turn the vaccination question with ingenious skill, so that its many facets shall reflect a multitude of curious lights, and after all we find that we rest in a security against this most horrid pestilence unknown to former generations. The disease is the same now as then, for we see its effect among barbarous tribes ; but because Dr. Jenner lived, and made the greatest of all discoveries in preventive medecine, we are almost completely safe." I have quoted from a public document which received the sanction of a learned deliberative body—and the approval of the Government of the State—the most generally intelligent State in the adjoining Union. What says the Ohio Board of Health ? "While sister cities of Ohio have been recently afflicted with small-pox, Cleveland has enjoyed an exemption far exceeding that of former years. * * * * Our comparative immunity from this loathsome and terrible disease conclusively demonstrates the preventive power of vaccination, and must impress every thoughtful mind with the munificence of the legacy the immortal Jenner left the human race."

I have purposely quoted at greater length from Continental than from British authorities, because it has been asserted by a certain orator who inveighed against vaccination at public gatherings in this city, that it was an "English remedy, and that Englishmen had a pride in engraving their "beastly" virus on the Christian children of fair Canada"—an assertion reflecting but little credit upon the head, and less upon the heart of the one who advanced it. But American authority, *quo ad* the vaccine question, cannot be suspected of partiality. I have singled out no individual writer on the subject (I might have quoted a thousand American writers in favour of the practice of vaccination) but have confined myself to State documents containing the deliberate expressions of deliberative bodies, reflecting the condensed thoughts of the best medical minds in the United States. I turn with little pleasure to this my own country, and especially to this my own city, and I find anti-vaccination views advocated, and disseminated by a small but ceaselessly active section of medical and legal thought. I find from personal knowledge a deeply rooted prejudice against what the scientific world generally has sanctioned; and I find disease, disfigurement, and death following in the wake of those teachings; teachings to the dissemination of which a portion of the daily press has lent its columns. I readily admit that small-pox has its periods of dormancy and its periods of activity, and that, every now and then, at irregular intervals, it overspreads a district or country as if epidemic, but why should it press so lightly elsewhere? Dr. Russell, President of the College of Physicians and Surgeons, residing in Quebec, gives the reason:—"We have **very** little small-pox here. We are all vaccinated." The table prepared by the skilled House

Surgeon of the Marine and Emigrant Hospital, of Quebec, Dr. Catellier, is a crushing and unanswerable argument against the anti-vaccinators. There were 131 cases admitted into the establishment between the months of May, 1874, and July, 1875, and of these the vaccinated numbered 54, *one alone* died. In 69 cases of un-vaccinated patients 32 were discharged cured, but somewhat disfigured, and 37 died. In 8 cases where it was doubtful if vaccination had or had not been performed, 6 were cured and 2 died. These computations afford us the following startling percentages, which every man and woman valuing the healthy future of their progeny ought to carefully note. The death-rate in *vaccinated* cases, is only 1.8 per cent.; in *unvaccinated* 53.6 per cent.; in doubtful cases 25 per cent. Can anything tend to expose and confirm the claims of this practice upon the people better than these data? Why does small-pox pass so lightly over Three Rivers? Dr. Badeau, the Doyen of the profession there, explains:—“*On n'a pas de picote ici. On se fait vacciner,*” The same may be said for Toronto. And why does the disease visit Montreal so severely? *We nurse it.* In Quebec, Three-Rivers and Toronto no one writes against, or attacks the principles of vaccination—the only prophylactic for small-pox. That the converse is true in Montreal is evident from the circumstance that the mortality is immensely greater among that nationality whose beautiful language has been made to serve as a vehicle for the dissemination of a most fatal error. Dr. Osler has kindly handed me the records of the Small-pox Department of the General Hospital from Dec. 14, 1873, to July 21, 1875, the period during which it was under the charge of Dr. Simpson and himself. There were admitted during that period 261 cases,

and there were 73 deaths. But how was the death-rate distributed? In the unvaccinated, 58.8 per cent.; in the vaccinated 17.09 per. cent.! Dr. Simpson furnished the following additional facts: "All the unvaccinated small-pox patients, except two, had the confluent form i. e. the serious form of the disease. Of the whole number of the vaccinated admitted with small-pox only two had more than two good vaccination marks upon the arm, and only two had been successfully re-vaccinated. These latter two were so slightly affected by the disease, that except as a precautionary measure, they might have continued to follow their daily occupations." We have now two civic hospitals in Montreal for small-pox; one presided over by the Sisters of Providence; the other by Miss Chambers. What is the experience of these ladies? I give the questions put to the matrons of both establishments, and their answers:—"Have you noticed any difference between the vaccinated and non-vaccinated inmates of the hospital?" Sister Nativity states, in French:—"There is no comparison between the effects of small-pox on the vaccinated and non-vaccinated; the vaccinated, as a rule, are not affected; and when they are they have it slightly; the deaths are among the unvaccinated." Miss Chambers' experience is precisely to the same effect. What more convincing evidence than this, coming, as it does, from sources whose trustworthiness is beyond doubt or question. But the register of the Civic Hospital, (and for the accuracy of which I can vouch) is even more painfully eloquent:

Patients admitted from 7th November 1874 to 1st November 1876, 564.

	Protestant.	Catholic.
Of these were.....	168	396
Of the above, recovered.....	134	269
" died	34	127
	168	396
The deaths among non-vaccinated...	25	89
" with 1 vaccine mark.....	7	32
" " 2 " 	2	6
" " 3 or 4 " 	0	0
	34	127
Total,.....		

Of the patients who had three, four or five vaccine marks (and there were many in each institution) *not one* died in either !!

Dr. Larocque obligingly analysed the above for me, and gives the following as the percentage of deaths in the various divisions.

DEATH RATE PER CENT.

PROTESTANTS.

Total received	168	Died	34	or	20-23	per cent.
Unvaccinated	"	54,	"	25	or	46-29
Vaccinated	"	114,	"	9	or	7-89

CATHOLICS.

Total received	396	Died	127	or	32-07	per cent.
Unvaccinated	"	165,	"	89	or	53-93
Vaccinated	"	231,	"	38	or	16-45

IN BOTH HOSPITALS.

Total received	564,	Died	161	or	28-54	per cent.
Unvaccinated	"	219,	"	117	or	53-42
Vaccinated	"	345,	"	47	or	13-62

Surely Gentlemen, comment is unnecessary on the above.

I do not quote from the physicians of the city, who, with a very small exception, have again and again expressed, and may yet again express, their entire belief in the prophylactic power of vaccination. Volume after volume has been written to establish the claim of vaccine, and my table, as I write, is covered with documentary evidence, the magnitude of which alone prevents its introduction here. Sufficient, however, has been adduced to warrant an answer to the first question in the affirmative: "that vaccination confers a greater or less degree of protection against small-pox."

2nd. *Are the effects of vaccination permanent?*

As a rule the answer may be: *yes*; but the exceptions are so numerous that I must admit the partial truth of what is claimed by some writers "that the protection which vaccination affords against small-pox is only of limited duration." During what time is there absolute immunity? This varies in different individuals; but I have long been of opinion, and that opinion is shared by those who have given attention to the matter, that the manner in which vaccination has been done in the first instance has much to do with the degree and period of that immunity. Although ten or twelve years are said to be the average period, the thoroughly vaccinated have an immunity of much greater duration. In a large, a very large number, unfortunately, vaccination is not performed with anything like approximate thoroughness.

This has been noticed in the Small-pox Hospital here, where an examination of the arms of the inmates has *rarely* discovered marks of a true Jennerian vesicle. But if there is doubt as to the continued immunity afforded by vaccination, there can be none when it has been *properly* performed a second time. Re-vaccination, when successful, affords *entire* immunity, and in support of this assertion I shall cite but one or two proofs from among a thousand. It has been an imperative rule for the last thirty-five years at the London Small-pox Hospital that every nurse and other servant of the Hospital should, on entering the service, be vaccinated. In their case it is generally re-vaccination ; and it is never afterwards repeated. These nurses live in the closest daily and nightly attendance upon small-pox patients ; and the other servants are constantly exposed to the profuse contagion : yet in no single instance, during these thirty-five years, has any one of these servants and nurses been affected with small-pox. Surely no stronger proof than this can be imagined, that re-vaccination, in the adult, is an absolute protection against small-pox, and need not be repeated. Up to the age of puberty, a child *properly* vaccinated may be considered safe,—but so many of those vaccinated have cicatrices deficient in number, and of a character not strikingly good, that re-vaccination should be resorted to where there is more than usual exposure to small-pox. I have instanced the London Small-pox Hospital as evidence of the advantages of re-vaccination, and shall cite from official sources evidence of the immunity conferred by it on some of the continental armies of Europe. In five years, says Seaton, there occurred in 14,384 re-vaccinated soldiers in Wurtemburg, only *one* instance of varioloid ; and among 30,000 re-vaccinated

persons in civil practice only two cases of varioloid (one of which was probably really a case of chicken-pox), though during these years small-pox had prevailed in 344 localities, producing 1,674 cases of modified or unmodified small-pox among the not re-vaccinated, and in part not vaccinated, population of 363,298 persons, in those places in which it had prevailed. In the Prussian army, since the introduction of systematic re-vaccination in 1834, the cases reported as "varioloid," and still more those called "variola," have been, nearly all of them, among that portion of recruits whose term for re-vaccination had not come, or whose re-vaccination had not been successful, or who were incubating small-pox when they were re-vaccinated. In the 20 years which immediately succeeded the adoption of this system there occurred altogether but forty deaths from small-pox in this large army—(or an average of two deaths per annum)—only four of the entire forty being in persons, who, it is said, had been successfully re-vaccinated. So also in the Bavarian army, in which there had been compulsory re-vaccination since 1843, there had not, from that date up to the time of a report made by the Minister of War in 1855, been a single case of unmodified small-pox; and only a very few cases of modified small-pox, without any deaths. While, therefore, I answer the second question in the negative, as to the invariable permanency of primary vaccination, the statistics quoted from official sources, with the almost universal collateral concurrence of medical practitioners, warrant the statement that, after successful re-vaccination, small-pox, even of the most slight or modified kind, is *rarely* met with; and that when the post-vaccinal small-pox is met with, of a severe character, it is due to the want of care in the performance of

vaccination in the first instance ; or to want of preparedness in the system when primary vaccination had been performed. From what has been said, a question of vast moment to adults necessarily presents itself. As all those who have been vaccinated but once run more or less risk of contracting the disease ; and as it is admitted that re-vaccination renews, or adds to, the security against small-pox, common prudence would suggest the course to be pursued by those who wish to guard against this malady.

Grisolle, in advising re-vaccination, says :

La pratique des re-vaccinations est généralement adoptée dans les pays du Nord ; elle tend aussi à se répandre en France. On peut invoquer en sa faveur qu'une foule d'épidémies de variole, sévissant chez des vaccinés, se sont tout à coup arrêtées dès qu'on eut soumis à la re-vaccination les individus exposés à la contagion. Ces faits sont désormais acquis à la science. C'est à l'aide de la re-vaccination, appliquée comme méthode générale, qu'on a presque complètement éteint la variole dans les armées Prussienne et Wurtembergeoise." *

Although it forms no part of my present subject, yet, as an impression prevails with some, that persons exposed to small-pox contagion incur additional risk in being vaccinated, and of having one disease engrafted on another, it is well to state that such a view

* Dr. Cuignet recently made the following statement at the Société des Médecins du Département du Nord : " With regard to the influence of revaccination as a preservative against small-pox, I will direct your attention to the quite special condition in which the soldiers of the Guard of Paris are placed in this respect. There is not a corps in the entire army in which revaccinations have been so frequently and so carefully performed ; and during seventy years no case of variola has been met with among them, in spite of the epidemics which have on several occasions decimated the populous quarters of Paris."

is entirely erroneous. If vaccination is performed sufficiently early, so that the areola may have time to form, it will prevent small-pox ; if later, it will modify that disease. M. March illustrates this rule thus :—“ suppose an unvaccinated person to inhale the germ of variola on a Monday, if he be vaccinated as late as on the following Tuesday, the vaccination will be in time to prevent small-pox from being developed. If it be put off till Thursday, the small-pox will appear, but will be modified. If the vaccination be delayed till Friday it will be of no use.” Sir John Watson, p. 888, adds :—“ Should the person have been formerly vaccinated, re-vaccination will be effectual two days later than this, because in re-vaccinated persons the stage of areola is reached two or three days sooner than in persons vaccinated for the first time.

3rd. *Is there risk of vaccination lighting up local inflammatory action ?*

When we consider the disposition, the temperament, the condition of health, of those vaccinated ; and the period of life at which vaccination is usually—and the period of the year at which it, is sometimes—performed, it is a matter of surprise that local irritation, or erysipelatous action, is not more frequently lit up. At certain seasons of certain years any abrasure of the skin, however slight even without vaccine lymph, is apt to cause erysipelatous inflammation. What medical man has not sometimes seen erysipelas to follow a slight bruise, or the scratch of a needle or of a thorn ? The accidents of this kind following vaccination are very few—not by any means as many as have been seen to follow the pulling of a tooth. Yet who ever advised that an aching tooth should be left alone because it had happened sometime, somewhere, and in the hands

of some one, that hemorrhage from the tooth socket had taken place ; that erysipelas—fatal erysipelas—had sometimes followed ; or that the bones of the jaw had been splintered ? These are accidental ; and so rare are they that they should not enter into one's calculations. So convinced am I of the safety of vaccination, that I have no hesitation in saying that a vaccinator, who knows his business, would vaccinate a thousand children with fewer unpleasant results, than a competent deatist would have in extracting the same number of teeth * There are, 'tis true, precautions to be taken, just as there are common sense precautions to be used by every one in eating, in drinking, in travelling. But these occurrences would be rare indeed if vaccinators exercised care and judgment in the selection of the lymph (which should be pure, taken at the proper time, and without admixture either of decayed epidermis or of pus) and in the selection of their subjects (who should be neither too young, too feeble nor too sickly) ; and with these precautions, severe local inflammation would be rare indeed. But it is not to be expected that some degree of irritation will not be produced. On the contrary, children vaccinated with the parest lymph will manifest, during the few days that the pustules are at the highest development, a certain febrile disturbance of the general system, during which the temperature of the body sometimes reaches 104° F. But

* As this is passing through the press some time after its actual delivery, I have the satisfaction of stating in illustration, that upwards of 6000 children have been vaccinated in this City within the past few weeks by the gentlemen named by the Board of Health ; and that the *alleged* cases of severe irritation following, were only two, in that large number. They were both seen by me and presented nothing unusual—the children being now quite well. Emphlysis coniformis occurred in one house where vaccination had recently been performed, and *all* the children had it ; but vaccination had nothing, whatever, to do with it.

in certain constitutions, and in certain states of the atmosphere, and especially when the crust is decayed and with it there happens to be, either through carelessness or ignorance, decayed epithelium or dried pus or both ; or even the purest lymph with an unclean instrument, the constitutional derangement above alluded to, and which was still within the range of health, assumes a morbid character, and more or less severe local or constitutional disturbance is the result. The third question, therefore, may be answered thus : moderate local inflammatory action may sometimes be lit up, but the severer forms are, as a rule, due to want of care in the selection of the crust ; to inattention to the age or health of the subject ; to carelessness in the use of the sacrificator ; or to atmospheric influence ; or to all combined.

4th. *Is there risk, when vaccinating, of inoculating the system with scrofula, or other hereditary disease ?*— If my answers to the previous questions were necessarily qualified, this one is not, and I emphatically answer : *no*. It would be an utter waste of time to proceed to discuss what has already been disposed of to the satisfaction of every unprejudiced mind. That vaccination induces scrofula, or other new disease, is an absurdity, notwithstanding the wonderful tales of a *Verde de Lisle*, that it has caused mental and physical degeneration of the human species ; diminishing men's stature ; incapacitating them for the fatigue of military service ; or even of the exercise of dancing. One word as to the first : the tallest, strongest and heaviest men in Europe, according to Professor J. D. Forbes, are the Irish ; yet Ireland is one of the, if not the, most thoroughly vaccinated countries in the world.

And as to the second, if vaccination induces disease, where are the results of those diseases ?

Instead of vaccination inducing scrofula or other hereditary disorder, it is claimed to diminish that tendency. Universal death, it is not denied, is the law of our nature. Though we must all die, yet life may be prolonged in particular instances; and particular instances go to make up the general result. The tables of mortality of a country are the data on which Life Assurance is built. It is upon a knowledge of these tables that the premium rate or percentage to be charged in different countries is regulated. Mr. Babbage in his work on Life Assurance, says: "it has been shown by Mr. Davillard, (a french writer) that the introduction of vaccination has *increased* the mean duration of human life by about three years and a half." And the premium rates are influenced accordingly. At the end of the last century the rate of mortality in London was one in every thirty.—One half century later, and the rate of mortality was one in forty-one! Yet during that interval vaccination had been introduced, and the practice had become general. It greatly strengthens, says Thomas, our argument in favour of vaccination, to find that the general mortality, in comparison with which that from small-pox has undergone so marked a diminution, has itself also notably decreased in proportion to the existing population.

In this connection I am happy to be able to cite Dr. Henri Cotin, author of the *Guide Medical*, who says: "On se préoccupe beaucoup dans le monde de l'idée que le vaccin pris sur des enfants malsains peut communiquer la maladie de l'individu. Cette idée est complètement erronée; *jamais aucune maladie n'a été inoculée avec le vaccin*, et ce dernier pris sur l'enfant le plus malingre, pourvu qu'il ait les qualités physiques que nous avons indiquées, est tout aussi bon que ~~celui~~ qui provient du plus bel enfant."

I shall not do more than allude to that absurd paradox advanced by a mathematician, and supported by two or three physicians as paradoxical as himself, that vaccination has transformed small-pox into typhoid fever! and that, in causing the disappearance of the former, it had increased the frequency and virulence of the latter! There may be an excuse for a mathematician—knowing nothing of medicine—to hold such a view; but there can be none for physicians, as it could only be the offspring of profound ignorance of the merest elementary literature of the profession. Every physician should know that typhoid fever is not a recent disease—but that for centuries before the introduction of vaccine it had the same hideousness it has now—and will have so long as sanitary laws are set at defiance.

5th.—*Is there risk, when vaccinating, of inoculating with syphilis or other acquired diseases?* The allegation has been made by some in the affirmative; but when it is borne in mind the strong temptations to employ false pretexts, it is a matter of surprise that vaccination has not been more generally “pitched upon by persons in search of an apology for their syphilitic children.” For my own part, not only have I never seen a case of vaccination of syphilis, but have never met a medical practitioner who had seen a case, either in his own practice or in that of another. We all know how the slightest scratch or cut is apt to develop intractable ulceration in a child having latent syphilis; and how the ulceration thus produced requires the local and constitutional treatment of a syphilitic sore. A slight scratch, required for vaccination, may assume a specific character with the purest lymph, when conjugal infidelity, and not the vaccination, is the cause. Sores somewhat resembling syphilitic sores

have occasionally appeared after vaccination, and even in this city have been taken for syphilis. But their early healing without specific treatment, apart from their appearance, forbids the assumption that they were syphilitic sores. These are what are called by Rayer, Auzias Turenne and others *vaccinelle* or *raccinoïde*, and may arise from: 1st the vaccination of a syphilitic child, or 2nd the vaccination of a child who had already been vaccinated, or who had had small pox or who manifested an inaptitude for the vaccine influence. That vaccine lymph does not carry with it the syphilitic virus, even in cases of undoubted syphilis, may be fairly inferred from the experiments which have been performed on a large scale on the continent of Europe, where, in not one of those experiments, has anything like syphilis resulted. The British Public Health Report published by authority of Government, and presented pursuant to act of Parliament is so germane to this part of my subject that I shall quote from it at considerable length. M. Taupin, of the Children's Hospital in Paris, in order to settle such questions as these, had, in a large number of cases, deliberately vaccinated from the arms of children who (while under vaccination) were sick with all other sorts of communicable diseases, including syphilis; but had never, on any occasion, seen any of these affections communicated in his vaccinations: "*dans aucun cas, nous y insistons à dessein, le virus n'a rien communiqué que la vaccine toute seule.*" Dr. Schreier of Ratisbon had similarly, on two occasions, experimented with vaccine lymph from syphilitic children and, like M. Taupin, had got no syphilitic results. Professor Heim of the Wirtemberg military service, had done similar experiments, with similarly negative results. Dr. Heymann had, as seen the habitual

practice in Java, that children having scrofula, syphilis, itch, the endemic framboesia, and other complaints, were used indifferently with others as sources of vaccine lymph; and that no evidence ever appeared of any of the complaints being so communicated. And to this former negative testimony, from several independent experimenters, I may now add the similar testimony of Professor Bœck of Christiania; testimony which has peculiar value because of Dr. Bœck's very eminent relation to contemporary studies of syphilis. Dr. Bœck reports that, having under his observation two men affected with elephantiasis, two men who had never had syphilis, and whom their elephantiasis of course would not have rendered insusceptible of it, he, on three different occasions far apart, vaccinated these two men from children having well developed hereditary syphilis, that in one of the six vaccinations, five normal vesicles resulted, but in the others, none, nor any other local change; that "these two patients were observed daily during three years, and never presented a single symptom of syphilis."

With well attested experiments like the above standing on record, we are obliged to doubt whether vaccination (*i.e.* genuine and simple inoculation with vaccine lymph) from however syphilitic a subject, can possibly communicate syphilis; or, at the very least whether some stage of the vaccine vesicle more advanced than vaccination rules allow to be proper for lymph supply, or some admixture, which fastidious vaccinators never permit, of blood with the vaccine lymph, must not be a condition for such possibility. That some ignorant quack salver, pretending to vaccinate, but neither knowing the aspects of a vaccine vesicle, nor caring from what sort of body he draws

his supposed lymph, may take as his " healthy source for lymph supply" an infant all maculated or ulcered with syphilitic skin disease, and may from its *spots* or *sores* transfer infective material to some victim of his mis-called vaccination, is of course evident; for syphilis does not cease to be syphilis because noodle or knave calls it vaccinia; but facts of this kind cannot in any reasonable sense be counted against vaccination, any more than we should count it a fact against Quinine that some grocer had dispensed Strychnine in mistake for it. Finally, too, I permit myself this general remark: that, in proportion as any alleged fact contradicts an otherwise universal experience, the individual witness must be regarded as making larger and larger demands on us for belief; and that in matters like the present, where sources of fallacy are so abundant, the witness's accuracy of observation requires to be most thoroughly guaranteed.

Dans le monde, says Grisolle, les parents se préoccupent beaucoup de l'idée que leurs enfants pourraient être vaccinés avec du mauvais vaccin, c'est-à-dire provenant de sujets malsains. Quoiqu'il n'y ait pas plusieurs qualités de vaccin, quoique le virus qu'on retire d'un enfant fort ou faible, d'un individu ayant le syphilis, les scrofules, etc., ait en général la même efficacité, cependant il y a toujours intérêt à prendre du vaccin chez des sujets vigoureux, attendu que, chez les individus faibles, on voit le virus dégénérer promptement

Relativement à la syphilis, il est certain aussi que le vaccin fourni par un vérolé *ne peut transmettre que la vaccine lorsqu'il est pur, c'est-à-dire sans mélange de sang*: il n'en est plus de même lorsque la pointe de la lancette qui est chargée du vaccin, est salie par la plus minime quantité de sang.

The cases of supposed inoculation of syphilis with the vaccine virus are not many, and an analysis reduces them to very few—and those few are still further reduced by the fact that the grossest ignorance and misconduct were, in some instances at least, imputed to the vaccinators. The few cases that have been published in the past seventy years, chiefly from Continental sources, are utterly insignificant in numbers and importance, and lead us to ask the same question as Mr. Simon: "if our ordinary current vaccination propagates syphilis, where is the syphilis that it propagates? Who sees it? The experience of the department is an entire blank on the subject. For the last ten years we have been in incessant intimate communication with the different parts of England on details of public vaccination, and during these years, every one of the about 350 vaccination districts into which England is divided has been visited three or four times by an inspector specially charged with the duty of minutely investigating the local practice of vaccination; yet from this systematic and extremely detailed search for all that has to be said on the subject of vaccination in England, no inspector has ever reported any local accusation or suspicion that a vaccinator had communicated syphilis. Again, our national vaccine establishment has been in existence for more than 60 years, vaccinating at its own stations every year several thousands of applicants, and transmitting to other stations supplies of lymph, with which every year very many (at present 50 or 60) other thousands are vaccinated, who in their turn, become sources of vaccination to others; but this vast experience does not, so far as I can ascertain, include knowledge of even one solitary case in which it has been alleged that the lymph has communicated

syphilis. Is it conceivable that these negative experiences could be adduced if the vaccine lymph of children with latent hereditary syphilis were an appreciable danger to the public health? Thirteen years ago it devolved upon me (as medical officer of the Board of Health), to make the widest possible enquiries, both of scores of public departments and institutions, and also of many hundreds of individual practitioners, in our own country and on the continent of Europe, with a view to elicit all existing experience on the validity of objections which had been alleged against vaccination; and on that occasion I, of course, gave great prominence to the point which is here raised. One of the four questions which I circulated was the following:—"Have you any reason to believe that lymph from a true Jennerian vesicle, has ever been a vehicle of syphilitic, serofulous, or other constitutional affection, to the vaccinated person; or that unintentional inoculation with some other disease, instead of the proposed vaccination, has occurred in the hands of a duly educated medical practitioner?" The answers which I received on this, as on each of my other points, from 542 members of my profession, are, as regards syphilitic inoculation, only just short of being an absolutely uniform "No." The alleged cases (of inoculation) were thrown into real insignificance by their relation to the main body of testimony. Men of the oldest and largest consulting practice in the United Kingdom; men who were believed to have seen every variety of disease and accident to which the human body is liable; our leaders who had taught medicine and surgery to the mass of the profession; physicians and surgeons of our largest metropolitan and provincial hospitals, in England and Scotland and Ireland; physicians who

specially studied the diseases of infancy ; surgeons who had specially studied the inoculative diseases ; pathologists of distinguished insight and learning,—men of all these sorts, scores on scores of them, had never in their experience “had reason to believe or suspect any such occurrence as my question described.” In the alphabetical series to which I have referred there may be read all the most eminent British names of thirty years ago, certifying to such negative experiences ; there may be read, too, that equally negative in Paris had been the vast experience of Chomel and Moreau, Rayer and Ricord, and Rosstan and Velpeau ; equally negative at Vienna that of Hebra and Oppolzer, and Sigmund. And in here recurring to that very remarkable mass of testimony. I may repeat the remark which my former review of it suggested to me : “Obviously one at least of two conclusions is inevitable ; either it is that with reprehensible carelessness as to the source of lymph, vaccination (so long as in any sense of the word it is vaccination) cannot be the means of communicating any second infection ; or else it is the case that in the world of vaccinators care is almost universally taken to exclude that possibility of danger. To the public, perhaps, it matters little which of these conclusions is true. Though it would be the merest idleness to take again, now, the sort of formal census of medical opinion which I took thirteen years ago, I may state that ever since that time I have felt it among my strictest duties to be generally watchful and interrogative on the present subject ; all the more so as the period has been one of extraordinary pathological progress, and especially has brought to light very important new knowledge concerning syphilis ; and I have every reason to believe that a

present census of personal experience in this country would give just the same practical results as those which accrued from the former enquiry. Indeed, in a few very important directions I am satisfied myself that it does so. I may mention, for instance, that the Army Medical Department has, during the last eleven years, had cognizance of 151, 316 (adult) vaccinations and re-vaccinations performed on the soldiers and recruits of Her Majesty's service, where, from the nature of the case, the subjects of the proceedings are persons who afterwards permanently remain under medical observation, and in whom, therefore, no syphilitic consequences of vaccination could possibly escape notice; where, moreover, the chances of latent constitutional syphilis in subjects furnishing the lymph must be about the same as among our civil population, but in all this vast and critical experience, so far as is known to Dr. Balfour (the eminent and laborious reporter on the diseases of the British army) *no single case has ever been alleged of a soldier syphilized by vaccination!* Indisputable certainties, which any one can verify for himself, are:—first, that year by year millions of vaccinations are performed in Europe with scarcely a solitary accusation transpiring that syphilis has been communicated by any of them; and, secondly, that physicians and surgeons who could not fail to see such cases in abundance, if such abundance were a reality, concur with almost absolute uniformity, hundreds of them together, in declaring that they had “never in their experience seen even a single case of the kind.” Surely for every practical purpose, “certainties like these are our best guides; and with such certainties in our knowledge it would be the merest pedantry to insist on infinitesimal speculative uncertainties.”

One terse observation from the Board of Health of Ohio, and I have done ; “ *When properly vaccinated by an intelligent physician, no disease could be produced by inoculation other than vaccinia, the one to be desired.*”

It may be some satisfaction to the learned and laborious writers, from whom I have quoted above, to learn that their views are fully coincided in by most of the leading minds of the profession in Montreal. On Friday, of last week, I submitted the following questions to the members of the Medico-Chirurgical Society of this city. Doctors are said to differ, but the unanimity of view on the following was most noteworthy. The meeting was an unusually large one, called for another purpose, and the secretary (Dr. Bell) has kindly furnished me with the accompanying extract from the minutes, with the permission of the Society for its publication :

Meeting of the Medico-Chirurgical Society of Montreal, on the 13th October, 1876.

Twenty three members present.

Moved by Dr. HINGSTON, seconded by Dr. R. P. HOWARD.—1st. That vaccination confers a certain degree of immunity from small-pox, by either preventing or modifying that disease.

2nd.—That such immunity is not always permanent, but may be rendered so by re-vaccination.

3rd.—That vaccination may produce, in some instances, a certain degree of inflammatory action, which may be modified, increased, or diminished, by the age, constitution or condition of the patient, or by the state of the atmosphere.

4th.—That vaccination does not, in any instance, produce scrofula or other hereditary disease.

5th.—That neither the evidence hitherto furnished to, nor the experience of, the members of this Society, is of a character to lead to the conclusion that syphilis is ever inoculated with vaccine lymph.
Carried unanimously.

In concluding I may add: As it will be somewhat difficult for you to obtain a sufficient supply of lymph to *continue* your vaccinations, owing to the circumstance that many mothers, while solicitous regarding the physical condition of the child who has the honour of furnishing vaccine lymph to *their* children, refuse, in turn, to render the same service to others, under a pretext that it disturbs or fatigues their precious offspring. Explain to such mothers, please, that they do an act of injustice; that as they received immunity on the one hand, they are obliged, in justice, to dispense it on the other; that had other mothers acted as selfishly, the supply could not have been kept up for *their* advantage. Some mothers refuse, under the belief that puncturing a vaccine vesicle, and receiving a portion of its contents, will diminish the protective influence intended to be gained by the vaccination in the first instance. But this is an error, and should not be permitted as an excuse to those who are slow to do for others what has been done for them. A mother should never hesitate to permit her child to be the source of safety to other children, not less dear to their mothers. You can assure them moreover, with confidence: that the removal of a portion, or even of the whole—(which is never done—see Clause 7 of *Instructions*) of a vaccine vesicle, in no way impairs the protective influence, or produces any, even the slightest inconvenience or suffering

Gentlemen: I have detained you much longer than I intended, and beg to thank you, and my many medical friends and fellow citizens who have honoured me with their presence this afternoon, for their and your most patient attention.

APPENDIX.

Since the foregoing was delivered, many of my medical friends, some not members of the Medico-Chirurgical Society of Montreal, and some not present at the meeting in question, expressed a desire to have an opportunity afforded them of recording their opinion on the questions submitted to, and unanimously adopted by that Society on the 13th October last, and referred to on page 42. I willingly acceded to their request, and have been furnished with the following list, not at all complete, I am informed, of medical gentlemen practising in this City supporting those resolutions. Their names are published *in extenso*, as it has been industriously circulated that those who practice vaccination are unsustained by medical opinion here. The reader will perceive the remarkable unanimity of thought, as expressed by the very large number, on a matter of such vital moment; and will recognize among that number our most distinguished physicians—French and English; nearly all the physicians at our hospitals; nearly all the physicians at our dispensaries; nearly all the professors in our medical schools and colleges; nearly all our oldest and ablest men in private practice, with a life long experience to appeal to, and without motive to mislead; nearly all our middle aged practitioners engaged in large and lucrative practice; nearly all our young men fresh from their studies, and familiar with the most advanced views of trans-atlantic medical minds—some of them just returned from Europe where they have had opportunities of learning the thoughts and opinions of the most eminent in our

profession there; not, perhaps, the views of such men as might well be astonished to find themselves quoted as authorities three thousand miles away. I thank my medical friends for their readiness in expressing their opinion on this important question; and much doubt if there is any other topic or point in controversy on medicine, surgery or pathology upon which so unanimous an expression of medical thought could be obtained in this city. In matters of *law*, judges differ; but the decision of the majority is, after all, the decision of the court, and litigants must abide by it. Respect for a majority, so well pronounced, of competent *medical* judges will, in this instance, I hope —considering the contingency in events —lead to a cessation of those ill timed attempts to interfere with the efforts that are now being made to check a loathsome disease by the only prophylactic which science has yet discovered

*Pronunciamento of Physicians of Montreal, in
favour of Vaccination.*

G. M. Abbott,	M.D.	S. Lachapelle,	M.D.
T. J. Alloway,	"	L. Laberge,	"
P. A. Allard,	"	Jos. Leduc,	"
G. Archambault,	"	B. H. Leblanc,	"
P. Beaubien,	"	A. Lamarche,	"
J. Bell,	"	H. Lemery,	"
F. Barnes,	"	J. A. A. Léonard,	"
D. Baynes,	"	J. L. Leprohon,	"
G. A. Baynes,	"	D. C. MacCallum,	"
J. E. Berthelot,	"	A. C. Macdonnell,	"
J. G. Bibaud,	"	W. Macdonald,	"
A. Bondy,	"	D. McCallum,	"

R. Brodeur,	M.D.	J. H. A. Matte,	M.D.
F. Buller,	"	L. J. A. McMillan,	"
G. O. Beaudry,	"	W. H. Mondelet,	"
W. E. Bessey,	"	E. P. Mount,	"
A. A. Browne,	"	F. Müller,	"
G. A. S. Brunelle,	"	R. L. Macdonnell,	"
E. J. Bourque,	"	J. B. McConnell,	"
W. H. Burland,	"	G. W. Major,	"
W. B. Burland,	"	A. W. Marston,	"
G. W. Campbell,	"	A. Mathieu,	"
F. W. Campbell,	"	G. H. Merrill,	"
P. F. Casgrain,	"	H. Merrill,	"
J. C. Cameron,	"	A. Meunier,	"
R. Craik,	"	P. B. Mignault,	"
A. Chamberland,	"	W. A. Molson,	"
J. D. Cline,	"	C. J. Morse,	"
J. O. Coutu,	"	J. W. Mount,	"
A. H. David,	"	W. Nelson,	"
F. Demers,	"	J. Nichol, .	"
S. Duval,	"	P. O'Leary,	"
J. J. Dugdale,	"	W. Osler,	"
P. L. J. Desrosiers,	"	H. Peltier,	"
G. H. Desjardins,	"	E. A. Paquet,	"
A. A. Duhamel,	"	Jas. Perrigo,	"
L. A. E. Desjardins,	"	A. Piché,	"
Th. E. D'Orsonnens,	"	Jos. C. Poitevin,	"
J. M. Drake,	"	E. K. Patton,	"
A. Deschamps,	"	P. E. Picault,	"
W. A. Duckett,	"	P. E. Plante,	"
Chas. Dansereau,	"	Alex. Proudfoot,	"

Chs. Dansereau, Jr. M.D.	J. P. Rottot, M.D.
C. Dubuc,	" J. Reddy,
O. C. Edwards,	" A. Ricard,
J. Eneas,	" T. H. Richelieu,
O. P. Etu,	" T. G. Roddiek,
E. G. Fenwick,	" T. D. Reed,
J. T. Finnie,	" Ed. Robillard,
W. Fuller,	" N. Robillard,
A. Fisher,	" Thos. A. Rodger,
R. T. Godfrey,	" G. Ross,
G. P. Girdwood,	" F. Rourk,
J. Gagnon,	" G. F. Slack,
W. Gardner,	" S. B. Schmidt,
F. L. Génand,	" F. J. Shepherd,
R. F. Godfrey,	" T. Simpson,
F. H. Girard,	" W. P. Smith,
Thos. E. Hayes,	" G. B. Shaw,
R. P. Howard,	" W. E. Scott,
T. Hughes,	" E. H. Trudel,
W. H. Hingston,	" F. X. Trudel,
H. Howard,	" F. Z. Tassé,
E. H. Hurtubise,	" R. Thompson,
R. Kennedy,	" E. H. Trenholme,
W. J. Kearney,	" Ls. Turgeon,
A. H. Kollmyer,	" J. R. Wanless,
A. B. Larocque,	" J. Wanless,
J. A. Laramée,	" Jos. T. S. Webb,
A. Latour,	" M. O'B. Ward,
H. T. Latour,	" Th. Wheeler,
N. Loverin,	" Geo. Wilkins,
P. E. Lachapelle,	" W. Wright,

